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What's Your Radiographic Diagnosis?

By

Richard T. Dixon, B.V.Sc., M.U.Sc., M.S.*

History

The patient was a yearling quarter horse gelding, presented with a soft tissue swelling and discharging sinus on the ventro-lateral border of the right mandible. The swelling had first appeared six weeks previously, and the sinus had been discharging for the last 5 weeks. There had been no loss of appetite or difficulty in chew-

ing, and the owner suspected a wood splinter or similar foreign body to be the cause.

Clinical Examination

The soft tissue swelling was firm and conical, and level with the first premolar. It was approximately 5 cm. in diameter and 3 cm. thick, with two small sinus openings at the apex of the swelling. On palpation there was some discomfort, and

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Figure 1. Medio-lateral ventro-dorsal oblique radiograph of the right mandible.

there seemed to be some underlying bone thickening. The inside of the mouth was examined, but there were no visible abnormalities associated with the gums or the right mandibular premolars.

Radiologic Examination

A medio-lateral ventro-dorsal oblique radiograph was taken of the right mandible, so that the path of the primary beam was at right angles to the axis of the conical swelling. (Fig. 1) The object of the examination was to detect any radiographic changes in the position, thickness, or density of the periosteum, cortex, or medulla.

Diagnosis

1. Primary alveolar periostitis with abscessation at the anterior root of the first premolar.(1)
2. Secondary bone abscess formation anterior to the first premolar alveolus.(2)
3. Two sinus tracks extending from the bone abscess to the periosteal surface of the mandible.(3)

Discussion

The diagnostic feature in these cases is the lytic area associated with pus accumulation, rather than a marked sclerosis or periostitis. In contrast to infection involving bones in the lower limbs, there

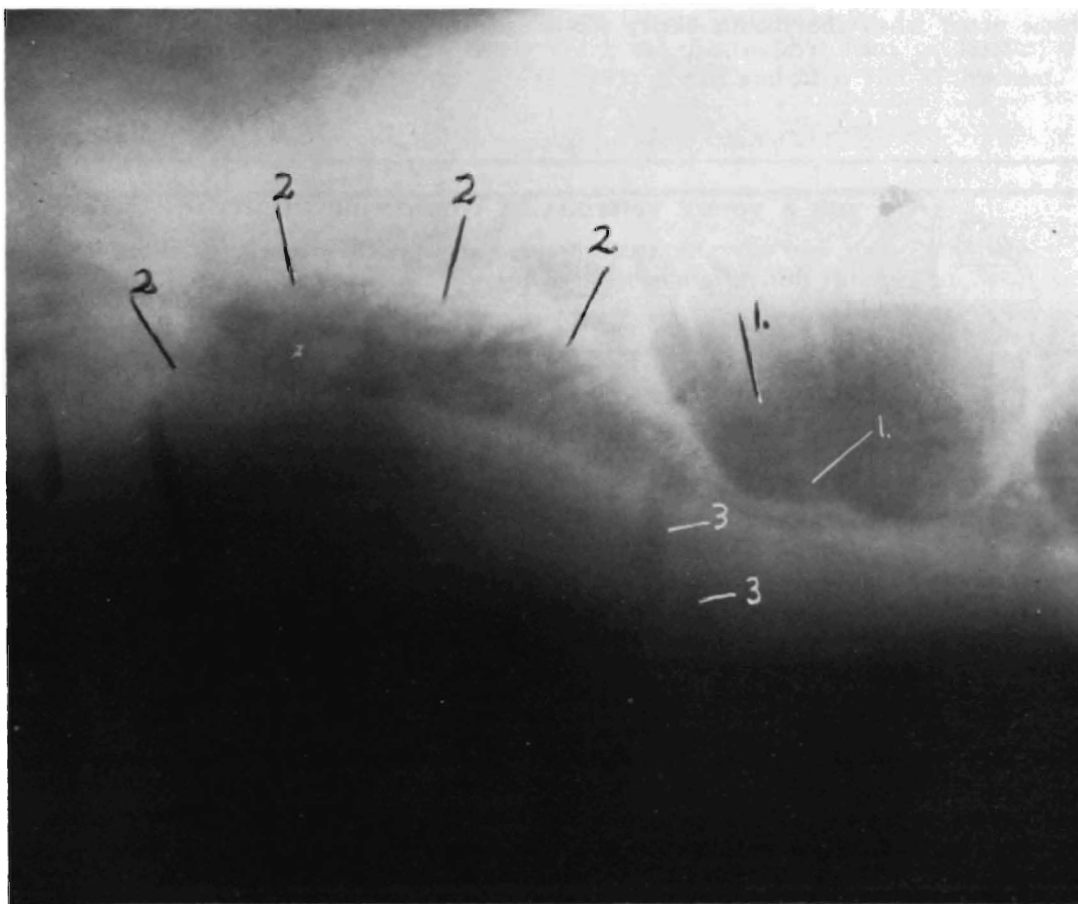


Figure 2. Right mandible, at the level of the first premolar.

is no sub-periosteal reaction or marked cortical sclerosis. In this case, there is a thin ring of sclerotic bone in the region of the apical abscess, and none associated with the secondary bone abscess.

There is no evidence of cortical displacement or sequestration, so that a fracture can be ruled out of the etiology. A kick or similar trauma can be ruled out on the basis of the lack of sub-periosteal calcification. The apparent bone thickening noted in the clinical examination was due to fibrous tissue thickening and proliferation stimulated by the pus as it tracked from the periosteum to the surface.

Since wood is the same radiographic density as soft tissue, the presence of a wooden foreign body will not be shown. The foreign body might be a grass or oat seed which had lodged in the gum-tooth junction and allowed infection to occur via the gum-tooth junction; in this event a sinus or inflamed area or gum should have been noted when the mouth cavity was

examined. If the foreign body had penetrated the skin from the outside, the reaction would be essentially that of periostitis and osteitis, rather than that of an apical abscess. Thus the implication of a persistent foreign body in the etiology can be confirmed or discounted by inference, rather than by success or failure in demonstrating its presence radiographically.

Treatment

At surgery it was found that the tooth was ankylosed in its socket. The tooth was repelled via an opening made in the ventral mandibular cortex, and which included the sinus tracks. Several fragments of alveolus produced whilst repelling the tooth were also removed. The cavity was packed, and irrigated every second day, at which time the packing was removed and renewed. Six days after surgery granulation tissue had closed the opening to the surface, and the patient was discharged.

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